

exploring the economic and health status of salt pan workers in tuticorin district

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Abstract

Salt is a vital dietary commodity that holds immense significance in our daily lives. Commonly used as an essential ingredient for human consumption, salt has been a fundamental commodity for centuries. Its versatile applications extend beyond the culinary realm, finding extensive use in the chemical industry and various industrial processes. Recognized as a fundamental and indispensable commodity, salt is consumed by individuals across all socioeconomic backgrounds, albeit within limited and predetermined quantities, regardless of its price or potential health implications. Despite its ubiquity, salt is not naturally found in its pure form but rather exists abundantly in seawater. This study aims to investigate the economic and health status of salt pan workers in Tuticorin District. This research endeavours to economic and health conditions of salt pan workers, including their income levels, access to basic amenities, and overall health status. By examining these factors, the study aims to provide insights into the challenges faced by salt pan workers and identify potential areas for intervention to improve their economic and health well-being. The findings of this study can serve as a valuable resource for policymakers, organizations, and stakeholders working towards enhancing the livelihoods and overall quality of life for salt pan workers in Tuticorin District.

Key Words: *Economic status, Salt pan workers, Access to amenities, Health outcomes, intervention, Well-being.*

1.INTRODUCTION

Salt, as an essential physiological requirement for sustaining life, holds paramount importance, particularly in the face of a vast and ever-expanding global population. Its significance stems from the fact that it serves as a vital source of sodium and chlorine, which are the predominant elements found in the human body. These elements play critical roles in bodily metabolism, and any significant alterations or imbalances can lead to severe consequences, even resulting in fatality. Furthermore, salt's pervasive influence is rooted in its widespread utilization as a cost-effective and abundantly available raw material in various industries, owing to its chemical properties. Globally, 120 countries engage in salt production, with a cumulative output reaching approximately 230 million tonnes. The United States claims the top position as the largest producer, followed by China and India, which secures the third rank. In India, Tamil Nadu emerges as the second-largest contributor to the nation's salt production, with Thoothukudi, a major port city in the state, serving as a primary hub for salt harvesting. Notably, Thoothukudi accounts for 14% of India's total salt production and an impressive 70% of Tamil Nadu's output. Spanning across 25,000 acres on the outskirts of Thoothukudi, salt production thrives, yielding an annual production of around 2.5 million tonnes (SivagamaShunmuga Sundari 2020). The production of salt in Tuticorin involves a significant unorganized sector, with approximately 51,647 salt workers actively engaged in this labour-intensive industry (Henry Pandiyan et.al 2021). These workers play a crucial role in the entire salt production

process, contributing to the region's economic growth. However, it is important to note that the salt industry in Tuticorin largely operates in an unorganized manner, with limited formal structures and regulations in place. Salt workers, who engage in the manufacturing, processing, milling, and packing of salt, face continuous exposure to salt within their working environment and surroundings (Ajeet Jasiwal 2016). This informal nature of the sector poses various challenges for the salt workers, including issues related to job security, fair wages, social security benefits, and access to essential services. The unorganized status of the sector also leads to difficulties in implementing effective labour policies and ensuring the overall well-being of the salt workers. Salt pan workers in Tuticorin encounter numerous work-related hazards and difficulties. They often receive meager wages that fail to adequately compensate for their arduous labour. Furthermore, their working hours are typically unregulated, resulting in long shifts without sufficient breaks or rest. Harassment is also a prevalent issue, particularly affecting women who endure mistreatment and abuse within the workplace. Gender inequalities are further perpetuated by male dominance, limiting opportunities for women in the salt production industry. Seasonal unemployment compounds the challenges, as salt production is heavily reliant on weather conditions and specific seasons, leading to periods of joblessness and financial instability. Additionally, the lack of proper toilet facilities imposes further hardships on salt pan workers, jeopardizing their health, safety, and dignity. It is crucial to address these working hazards and problems to establish fair and dignified working conditions, ultimately improving the well-being and overall quality of life for salt pan workers (SivagamaShunmuga Sundari 2020). Ophthalmic problems are prevalent among salt workers, primarily due to direct sunlight exposure and the glare caused by salt crystals in brine. These conditions often result in irritation and discomfort. In addition to ophthalmic issues, salt workers commonly experience symptoms such as irritation, traumatic ulcers, dermatitis, muscular and joint pains, headaches, and giddiness. It is crucial to develop preventive measures to address these problems and ensure the well-being of salt workers. By implementing appropriate mechanisms and interventions, the occurrence of these health issues can be reduced, leading to improved occupational health and safety for salt workers (Murugan et.al 2016).

II. OBJECTIVES OF THE STUDY

The study aims to achieve the following standard objectives:

1. To assess and determine the economic and health status of salt pan workers in Tuticorin District.
2. To analyze and identify the challenges and problems faced by salt pan workers in their working environment.
3. To provide recommendations and propose policy measures aimed at improving the overall condition and well-being of salt pan workers.

III. REVIEW OF LITERATURE

Bhattacharya (2017) assessed the current social and health status of workers depending on salt production to support their livelihood. The findings of the study show that there is a lack of social and health protections for salt workers at the salt pan work site. Besides, the study found that workers are exposed to hazardous work-environment factors and extreme climatic conditions. The author asserts that poor educational background and lack of awareness are the main causes of occupational health hazards such as bad oral habits and poor personal hygiene. Henceforth, this study recommends a comprehensive field study with qualitative and quantitative investigation and awareness programs related to health and safety of workers in Bhavnagar, Gujarat.

Durairaj and Murugan (2016) analysed the health hazard of salt workers in Tamil Nadu coastal areas, namely, Ramanathapuram, Tuticorin, and Nagapattinam. The study adopted sampling method to select and gather health impacts of salt pan workers. The study findings revealed that various health hazards factors like ophthalmic symptoms, dermatological problems, Headache, Giddiness, breathless ness and joint pains. The outcome of the Garret Ranking shows that dermatological symptoms ranked in 1st, headache 2nd rank and ophthalmic symptoms ranked in 3rd among the salt pan workers. The study, recommended both the central and state governments promote training to salt workers to inculcate modern salt technology amongst salt producers who are higher to producing salt with the ancient methods.

Prakash et.al (2018) analysed on socio economic conditions of the salt workers. Skin disease eye disease and back pain as the main problems. The data were collected from the primary source are analysed with reference by applying appropriate statistical tools, percentage and chi-square. The study findings revealed that 91% of the respondents are suffered from occupational diseases and 435 the respondents are affected skin disease and eye disease. The chi square result there is no significant relationship between the education level and opinion about their job towards salt pan workers. The author emphasised the state government should also make provision to compensation these workers against natural disasters like heavy rains, floods, cyclone and fires etc.

IV. SOCIO- ECONOMIC STATUS OF SALT PAN WORKERS

During the pre-independence period, the economic conditions of salt workers were truly deplorable. They lacked comfortable dwellings and had no respite from their arduous work. Unfortunately, even in the present day, the conditions of salt workers have not significantly improved compared to other industrial workers. They continue to be trapped under the control of moneylenders and employers, with limited opportunities for consistent employment throughout the year. Regrettably, poverty remains rampant within the salt worker community. Their meager incomes not only prevent them from having proper nourishment but also result in ill-fitting clothing and inadequate housing. The dire circumstances faced by salt workers highlight the urgent need for measures to uplift their living conditions and provide them with dignified and sustainable livelihoods(**Henry Pandiyan 2021**).

The plight of salt farm workers extends beyond their health concerns, encompassing numerous challenges related to their occupational, work-environmental, and personal safety. Non-governmental organizations (NGOs) dedicated to their welfare have shed light on the prevailing social issues that afflict these workers. Substance abuse, meager wages, insufficient access to nutritious food, illiteracy, and the pervasive problem of domestic violence against women are among the major concerns identified. These issues contribute to a dismal standard of living, intensified family conflicts, a rise in school dropouts due to limited employment opportunities, forced displacement, an alarming increase in mortality rates, heightened insecurity, substandard working conditions, prevalent alcoholism, prostitution, and an upsurge in child delinquency. The array of challenges faced by salt farm workers emphasizes the urgent need for comprehensive interventions aimed at addressing their circumstances and establishing a more equitable and secure environment conducive to their well-being (**Chirag Harisbhai Chauhan 2022**).

The working conditions of salt workers in Tuticorin district have been closely examined to gain a comprehensive understanding of their financial circumstances. This analysis encompasses various important aspects such as income, expenditure, savings, borrowings, working days, wages, annual allowance, yearly bonus, and the availability of welfare measures. The purpose of this examination is to delve into the intricate details of their economic situation and shed light on the specific challenges they encounter. By thoroughly studying these factors, we can identify areas that require improvement and develop targeted interventions to uplift the overall well-being of salt workers in Tuticorin district. The findings from this analysis will serve as a foundation for designing effective strategies and implementing measures that address the specific needs and challenges faced by salt workers, ultimately working towards creating a more prosperous and sustainable livelihood for them. (**Stanley David Pitchai 2019**).

V. WORKING CONDIONS OF SALT PAN WORKERS

According to a report by **Vrutti (2007)**, salt workers in various clusters endure highly precarious working and living conditions, along with severe violations of their human and labour rights. These individuals suffer from a multitude of occupational-related health problems due to the demanding nature of their work and the extreme weather conditions they face (**Murugan 2018**). The working environment in salt pans presents numerous challenges for the labour force, exposing them to various adverse conditions. The direct contact with inhalable salt dust poses a significant occupational hazard, putting the respiratory health of workers at risk. Furthermore, the presence of salt crystals in the brine intensifies physical stress, further straining the workers' bodies. The constant exposure to bright sunlight and glare, resulting from the reflection off the salt crystals and brine surface, adds to the difficulties faced by the workers. Collectively, these factors create a demanding and harsh work environment that jeopardizes the health and well-being of the workforce. It is of utmost importance to address these occupational hazards promptly and implement effective measures to safeguard the workers' health, ensure their safety, and promote a conducive working environment in salt pans (**Robin Brahma 2018**). The dire circumstances faced by salt pan workers are exacerbated by the absence of basic amenities at their worksites. The lack of safe drinking water, adequate food provisions, and sanitary facilities further compounds their struggles. The scorching heat leaves them without any shelter, depriving them of even a brief respite from the relentless sun. Additionally, the absence of designated areas for drinking water and meals adds to their hardships, with women often disproportionately affected by these challenges. It is entirely justified for the workers to voice their grievances, as they endure harsh and physically draining conditions in the vast expanses of salt pans. These difficult working conditions not only pose immediate challenges but also take a toll on their overall well-being. Urgent attention and intervention are needed to address these critical issues and improve the living and working conditions for salt pan workers, ensuring their basic needs are met and their rights and dignity are upheld (**Stanley David Pitchai 2019**). The seasonal nature of salt production and limited alternative employment options during the off-season contribute to salt workers experiencing significantly low annual household incomes. This, in turn, traps them in a cycle of debt as they resort to borrowing from private money lenders who charge exorbitant interest rates, sometimes as high as 60% per annum. As a result, salt workers remain entrenched in a state of poverty and vulnerability, facing economic impoverishment and social marginalization. Furthermore, the demanding nature of their work necessitates leaving their children without adequate care or support during early morning hours. The combination of restricted opportunities, low education levels, and limited accessibility and exposure further compounds the challenges faced by salt workers, reinforcing the cycle of economic deprivation and social disadvantage they endure (**Robin Brahma 2018**).

VI. LIVING CONDITIONS OF SALT PAN WORKERS

The majority of salt workers are employed as daily wage labourers, often working on contract and sub-contract basis in the salt industry. This precarious employment situation not only affects the workers themselves but also their families. Unfortunately, these families face numerous challenges, including a lack of access to basic amenities and poor housing conditions. The absence of social security and health security further exacerbates their vulnerable position. The low and irregular income earned by salt pan workers has cumulative effects on their overall living conditions, making it difficult to break free from the cycle of poverty and deprivation. It is crucial to address these systemic issues by implementing measures that provide better employment opportunities, improve housing conditions, establish social and health security mechanisms, and ensure fair and dignified livelihoods for salt pan workers and their families. Only through comprehensive efforts can we uplift their living conditions and promote a more equitable and inclusive society (**Mayuri Banerjee Bhattacharya 2017**). The living conditions of salt pan workers are characterized by a variety of housing arrangements, ranging from houses with brick walls and asbestos roofs to simple huts with collapsing thatches. The dwellings stand by while the "salterns" or areas where salt is made are

located just across the road, serving as their immediate workplace (**Aparna Karthikeyan 2023**). Seasonal salt workers are engaged in various activities throughout the salt production season. At the start of the season, they receive minimal wages, which gradually increase as the temperature rises and salt production escalates. These workers endure challenging conditions as they toil under direct sunlight, exposing themselves to high temperatures throughout their working hours (**Mathura Valli et.al 2019**). 52 years ago salt pan first salary was 1.25 Rs a day. In recent years, daily wage is Rs 395 for women and Rs 405 for men (**Aparna Karthikeyan 2023**).

VII. WORKING PROBLEMS OF SALT PAN WORKERS

Salt workers, employed under contractual terms, grapple with meagre wages that fail to provide them with a sufficient standard of living. Their exploitation by lenders and traders, both economically and physically, compounds their already difficult circumstances. To bridge financial gaps during the off-season, salt workers often resort to borrowing from informal credit sources or local money lenders, perpetuating a cycle of indebtedness. The unfavourable environmental conditions in their workplace, coupled with constant exposure to salt and the harsh salt pan environment, significantly impact their physical and mental well-being, leading to heightened stress levels and discontent among the workers (**Prakash2018**). The working conditions on salt farms are marked by challenging environments that expose workers to significant health risks, primarily related to heat. Heat-related illnesses, such as heat stroke, heat exhaustion, heat cramps, and heat rashes, are prevalent concerns in this context. The intense heat not only raises the probability of injuries due to reduced grip strength, impaired vision, and dizziness but also contributes to a higher risk of accidents. Among the population, individuals over the age of 65 and those who are overweight have heart diseases, high blood pressure, or take medications susceptible to heat-related effects are particularly susceptible to heat stress. Safeguarding the well-being of salt farm workers necessitates proactive measures to mitigate heat-related hazards and prioritize their health and safety in these challenging work environments (**Pimpan Silpasuwan 2019**).

VIII. PROBLEMS FACED BY WOMEN WORKERS

The increasing demand and significance of salt have spurred the growth of salt industries, creating a greater need for workers. However, the laborious nature of work in salt pans demands considerable physical strength and endurance. Unfortunately, women, who generally possess less physical strength compared to men, find themselves compelled to undertake these gruelling tasks in order to secure their livelihoods due to economic suppression, poverty, limited education, and lack of employment opportunities. Despite their vital contributions, women salt workers confront numerous challenges and injustices. They are denied access to basic amenities, such as proper toilet facilities, and endure persistently low economic status. Moreover, they face heightened risks of various health issues, including vision problems, hypertension, knee injuries, back pain, and tuberculosis. It is imperative to address the gender disparities inherent in this context and strive to improve the working conditions and overall welfare of women salt pan workers, ensuring their well-being, empowerment, and social advancement (**Sivagama Shunmuga Sundari 2020**). The challenges faced by the majority of salt workers, including issues related to wages and working hours, are significant and require attention. Of particular concern is the exploitation and sexual problems experienced by female workers in certain salt pans, highlighting the urgent need for measures to ensure their safety and dignity. Limited alternative employment opportunities push salt workers to migrate to different salt pans in search of livelihoods, but the lack of skills poses further hurdles in finding alternative work. Disturbingly, the prevalence of child and adolescent labour is on the rise as children accompany their parents and engage in salt work. In response to these difficulties, some female salt workers choose to discontinue working with their current employers and migrate to other districts for better prospects. Addressing these complex issues demands a comprehensive approach that combats exploitation, enhances employment opportunities, promotes skill development, and safeguards the rights and well-being of salt workers, with a particular focus on protecting women and children (**Henry Pandiyan et.al 2021**).

IX. HEALTH PROBLEMS OF SALT PAN WORKERS

Among the various health issues faced by salt workers, ophthalmic problems emerge as the most prevalent, likely resulting from the irritation caused by direct sunlight and glare from salt crystals and brine. Furthermore, salt workers frequently encounter additional symptoms such as irritation, traumatic ulcers, dermatitis, muscular and joint pains, as well as headaches and giddiness. These common symptoms highlight the urgent need for interventions aimed at mitigating the occupational health risks faced by salt workers, ensuring their well-being and promoting a safer working environment. A significant portion of salt workers are susceptible to occupational health issues, experiencing a range of symptoms such as ophthalmic symptoms, dermatological problems, headaches, giddiness, breathlessness, and muscular and joint pains (**Muruganet.al 2016**). Salt workers endure gruelling manual labour in an environment that lacks fundamental amenities like drinking water, schools, hospitals, and markets. This challenging setting exposes them to various health risks, including the potential for blindness, blood pressure issues, skin lesions, knee injuries, back pain, and exhaustion. Moreover, the prevalence of epidemics like malaria further adds to their vulnerability. Compounding these difficulties, the children of salt workers often drop out of school, facing the risk of chronic cough and tuberculosis. Addressing these pressing issues requires immediate action to improve living conditions, provide access to essential services, and prioritize the health and education of salt workers and their families. By implementing comprehensive measures, we can alleviate their hardships, break the cycle of deprivation, and create a more sustainable and supportive environment for their well-being (**Madhu 2006**). Salt pan workers are exposed to a wide array of workplace hazards, encompassing chemicals, biological agents, physical factors, adverse ergonomic conditions, allergens, and psychological stressors, among others. Particularly, hypertension and fluctuations in both systolic and diastolic blood pressure pose significant challenges for these workers in the salt pan industry (**Ajeet Jaiswal 2016**).

X. HEALTH PROFILE OF WORKERS

Inadequate water intake can result in dehydration, which poses significant risks to the body. The symptoms of acute dehydration vary depending on the extent of water deficit. At 5 percent dehydration, individuals may experience difficulties in concentration, headaches, and feelings of sleepiness. Tingling and numbness in the extremities can manifest around 6 percent dehydration, while collapse becomes a potential danger at approximately 7 percent dehydration. It is crucial to emphasize that a 10 percent loss of body water due to dehydration can be life-threatening. Thus, prioritizing proper hydration is essential for maintaining optimal health and overall well-being (**Swaka & Montain 2001**). The significance of adequate hydration was exemplified during the six-day War of 1967, where over 20,000 Egyptian soldiers tragically lost their lives to heat stroke. This stark contrast arose as Egyptian troops adhered to strict water rationing practices, while Israeli troops benefited from plentiful field water supplies and enforced water policies, resulting in minimal heat-related casualties. Although the discomfort associated with a 2 percent dehydration may seem negligible, the substantial decrease in work capacity, ranging from 20 to 30 percent at 4 percent dehydration, can significantly impact productivity in various settings. Recognizing the pivotal role of proper hydration is essential in maintaining optimal performance and preventing heat-related incidents in demanding environments (**World Bank 1998**).

XI. ENVIRONMENTAL ISSUES WITH SALT WORKS

Salt works have been associated with numerous environmental impacts, leading to adverse consequences for ecosystems. One significant concern is the corrosion of iron sheets caused by the high salt content in the surrounding environment. Additionally, salt works contribute to the rise in temperatures in the area, deforestation, and loss of pasture, salinity of fresh water sources, air pollution, and reduction of rainfall, land degradation, and increased dustiness. The process of salt production often involves the direct discharge of hyper saline water into the environment and estuaries without prior treatment. This discharge leads to an increase in sea salinity, negatively affecting marine life, including juvenile fishes, fish eggs, and mangrove

saplings. Addressing these environmental impacts is vital to preserve the delicate balance of ecosystems and ensure the sustainable coexistence of salt production and the natural environment (E De Souza 1997).

XII. IMPACT OF SALT WORKERS HEALTH CONDITION

Malnutrition, anaemia, vitamin and iodine deficiencies, poor vision, and musculoskeletal disorders pose significant health challenges for salt workers, affecting their overall well-being and productivity. Addressing these issues necessitates comprehensive interventions that encompass improving nutrition, access to healthcare services, implementing ergonomic measures, promoting regular vision screenings, and providing necessary support and treatment. By prioritizing the health and well-being of salt workers, we can enhance their quality of life, empower them to perform their demanding tasks effectively, and ensure a healthier and more productive workforce. Respiratory problems, including asthma and lung congestion, are prevalent among salt workers due to their exposure to high concentrations of saltwater, salt dust, and mixed dust in their work environment. Additionally, ophthalmic problems such as blurring of vision, refractory errors, watering of the eyes, and weak eyesight are frequently reported among these workers (Mayuri Banerjee Bhattacharya 2017).

XIII. SCHEMES FOR SALT WORKERS/ SALT INDUSTRY

1. The Central Salt and Marine Chemicals Research Institute (CSMCRI) have received a grant of Rs 1.80 crore from the state industries department to implement a 'saltpan cluster development programme.' This initiative aims to enhance the skills of agariyas and improve the quality of salt production, enabling them to achieve higher profits.
2. The Namak Mazdoor Awas Yojana, a central government scheme initiated in 2005 to provide housing for agariyas, has faced controversy in recent years. The construction of houses by NGOs assigned to the scheme has been called into question, with the Salt Commissioner's office issuing notices following numerous complaints of substandard construction and allegations of corrupt allotment.
3. In recent years, the organization has primarily concentrated on meeting collection targets outlined in the Salt Cess Act of 1953. Additionally, it has taken on the responsibility of coordinating the National Iodine Deficiency Disorders Control Program (NIDDCP), a Plan Scheme overseen by the Ministry of Health and Family Welfare.
4. The Tamil Nadu Manual Labour Welfare Board has devised a scheme to address the issue of off-season job loss by offering a monetary assistance of Rs 5000 per annum. This initiative aims to provide support to manual labourers during periods when their regular employment is temporarily unavailable.

XIV. SUGGESTIONS AND RECOMMENDATIONS

The researchers propose the following suggestion to enhance the condition and elevate the standard of living for workers.

- Workers in the salt industry should be ensured job security.
- To enhance the condition and elevate the standard of living of salt workers, it is crucial for the government should to provide support and assistance.
- In order to address the prevalence of occupational diseases among a significant number of salt workers, it is imperative to establish a dedicated hospital in Thoothukudi with comprehensive facilities, catering specifically to their needs and well-being.
- It should be provide separate toilet facilities for male and female workers in salt pans, ensuring their privacy, hygiene, and comfort.

- The World Health Organization should recommended salt producers to prioritize the provision of safety instruments, acknowledging their importance in safeguarding the well-being of workers.
- Addressing the lack of job security for women workers, the government should take necessary action through the labour welfare department to ensure job security measures are implemented.
- The government should mandate salt pan employers to conduct annual medical camps for their workers, promoting regular health check-ups and early detection of potential health issues.
- Both the government and salt producers must actively create awareness among salt industry workers regarding workplace hazards and the necessary precautions to ensure a safe working environment.
- To effectively address labour-related issues, the government should establish an annual state-level tripartite committee responsible for determining wage rates, bonuses, and incentives for salt industry workers.

XV. CONCLISIONS

Salt workers in Thoothukudi face numerous challenges, including fatigue from working long hours under the relentless sun, often without proper protection. With seasonal employment and meager income, these workers lack social and health security. They endure hazardous work environments and extreme climatic conditions, which contribute to various occupational health conditions. Dental problems, skin issues, and musculoskeletal ailments are common among them. Providing gumboots, gloves, and goggles is crucial to shield them from high solar radiation. Despite the government's provision of housing facilities and financial assistance during the off-season, salt workers still face harsh working conditions and financial insecurity. Job security is a significant motivational factor that is currently lacking in this industry, resulting in poor conditions for the salt workers of Thoothukudi. However, the Thoothukudi salt industry is poised for accelerated development in the near future. Recently, the state government allocated Rs. 4.23 crore to provide financial assistance of Rs. 5,000 each to 8,465 labourers for the fiscal year 2022-23, recognizing the pressing needs of the salt workers. It is crucial for both the government and local non-governmental organizations to prioritize the health and socio-economic well-being of these salt workers.

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